

WE CLAIM:

1. A door lock apparatus, comprising the combination of:

a trim plate securable to the outside of a door;

a cylindrical lock assembly secured to said trim plate inwardly thereof

when said plate is secured to the door, said cylindrical lock assembly including a

latchbolt, a lock body having a retractor for said latchbolt, a spindle inwardly

extending from said lock body and coupled to said retractor for unlatching said

latchbolt upon rotation of said spindle, and a handle secured to said spindle for

rotating said spindle;

a cylinder lock including a housing and a cylinder actuatable for rotation in

said housing, said cylinder lock secured to said trim plate and outwardly

extending from said lock body; and

a cam secured to said cylinder and rotatable therewith, said cam coupled

to said retractor for unlatching said latchbolt upon rotation of said cylinder.

- 1 2. The apparatus according to Claim 1, further including:
2 a key insertable in said cylinder lock and rotatable for rotating said
3 cylinder.
- 1 3. The apparatus according to Claim 2, wherein:
2 said cylinder lock is a mortise lock cylinder.
- 1 4. The apparatus according to Claim 1, wherein:
2 said trim plate includes a pull handle for permitting the door to be pulled
3 open when said plate is secured to the door and with said retractor unlatching
4 said latchbolt.
- 1 5. The apparatus according to Claim 1, wherein:
2 said trim plate is a pull plate.
- 1 6. The apparatus according to Claim 1, wherein:
2 said trim plate includes a door engaging section securable to the door, a
3 pull handle extending from said door engaging section, and a top edge and a
4 bottom edge tapering toward said pull handle from said door engaging section.

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1 7. The apparatus according to Claim 2,

2 wherein

3 said trim plate includes an opening;

4 and further including

5 an attachment plate secured to said trim plate, said attachment plate

6 including an opening in registration with said opening in said trim plate, said

7 openings permitting insertion of said cylinder lock therein, said attachment plate

8 adapted to releasably secure said cylinder lock thereto when said cylinder lock is

9 inserted in said openings.

1 8. The apparatus according to Claim 7, wherein:

2 said openings in said attachment plate and said opening in said trim plate

3 are configured for facilitating outward withdrawal of said cylinder lock with

4 said key inserted in said cylinder lock.

1 9. The apparatus according to Claim 3, wherein:

2 said trim plate includes an opening with at least two spaced radial
3 protrusions into said opening;

4 said mortise lock cylinder includes at least two longitudinal grooves
5 therealong in registration with said at least two protrusions for rotationally
6 orienting said mortise lock cylinder on said trim plate; and

7 said rotatable cam includes an arcuate member having cam ends for
8 operatively cooperating with said retractor upon rotation of said cam by said key
9 inserted in said mortise lock cylinder, said arcuate member including peripheral
10 notches at least one of which is alignable with a one of said grooves and a one
11 of said protrusions when said cam is rotated by said key inserted in said mortise
12 lock cylinder.

1 10. The apparatus according to Claim 9, wherein:

2 said opening in said trim plate further includes a cutout adjacent at least
3 one of said protrusions configured for permitting a one of said cam ends to pass
4 through said cutout when said cam is rotated by said key inserted in said mortise
5 lock cylinder.

1 11. The apparatus according to Claim 10, further including:

2 an attachment plate secured to said trim plate, said attachment plate
3 including an opening configured with at least one cutout similar to said at least
4 one cutout in said trim plate, said openings including said cutouts in registration,
5 said attachment plate adapted to releasably secure said mortise lock cylinder
6 thereto when said mortise lock cylinder is inserted in said openings.

1 12. The apparatus according to Claim 11, wherein:

2 said opening in said attachment plate further includes an arcuate cutout
3 for facilitating entry of said arcuate member into engageable position with said
4 retractor.

5 13. The apparatus according to Claim 1, further including:

6 a hold-back apparatus in said cylindrical lock assembly including a lock
7 in said handle for locking said spindle when said spindle is in a rotated position
8 unlatching said latchbolt.

1 14. The apparatus according to Claim 13, wherein:

2 said handle is a lever handle and is in a rotated position when said
3 spindle is locked with said latchbolt unlatched.

1 15. The apparatus according to Claim 1,

2 wherein

3 said lock body includes a chassis plate rotationally supporting said
4 spindle and including a radial first notch;

5 said spindle includes a second notch in radial alignment with said first
6 notch when said spindle is in a rotated position unlatching said latchbolt;

7 and further including

8 a radially extending member carried by said spindle and captured by said
9 first notch; and

10 a lock in said handle coupled to said member for moving said member
11 longitudinally along said notches, when said notches are radially aligned,
12 between a first longitudinal position captured by said second notch and a second
13 longitudinal position not captured by said second notch.

1 16. The apparatus according to Claim 15, wherein:

2 said handle is a lever handle and is in a rotated position when said
3 latchbolt is unlatched.

1 17. The apparatus according to Claim 15,
2 wherein
3 said lock is a bored cylinder lock having a rotatable tail piece;
4 and further including
5 a rotational-to-translational motion converter carried by said spindle for
6 converting rotation of said tail piece to longitudinal movement of said member.

1 18. The apparatus according to Claim 17, further including:
2 a key insertable in said bored lock cylinder and rotatable for rotating said
3 tail piece.

- 1 19. A door lock apparatus, comprising the combination of:
- 2 a cylindrical lock assembly including a latchbolt, a lock body having a
- 3 retractor for said latchbolt, a spindle extending from a first side of said lock
- 4 body and coupled to said retractor for unlatching said latchbolt upon rotation of
- 5 said spindle, and a handle secured to said spindle for rotating said spindle;
- 6 a cylinder lock including a housing and a cylinder actuatable for rotation in
- 7 said housing, said cylinder lock extending from a second side of said lock body
- 8 opposite said first side; and
- 9 a cam secured to said cylinder and rotatable therewith, said cam coupled
- 10 to said retractor for unlatching said latchbolt upon rotation of said cylinder.

1 20. The apparatus according to Claim 19, further including
2 a key insertable in said cylinder lock and rotatable for rotating said
3 cylinder.

1 21. The apparatus according to Claim 20, wherein:
2 said cylinder lock is a mortise lock cylinder.

1 22. The apparatus according to Claim 19,
2 further including
3 a door trim securable to a face of a door;
4 and wherein
5 said lock body is secured to said door trim with said cylinder rotatably
6 actuatable from one side of said door trim and with said handle of said cylindrical
7 lock assembly rotatable from another side of said door trim opposite said one
8 side.

1 23. The apparatus according to Claim 22, wherein:
2 said door trim is a pull plate.

1 24. The apparatus according to Claim 23, wherein:
2 said pull plate includes a door engaging section securable to the door, a
3 pull handle extending from said door engaging section, and a top edge and a
4 bottom edge tapering toward said pull handle from said door engaging section.

1 25. The apparatus according to Claim 19, further including:

2 a hold-back apparatus in said cylindrical lock assembly including a lock
3 in said handle for locking said spindle when said spindle is in a rotated position
4 unlatching said latchbolt.

1 26. The apparatus according to Claim 25, wherein:

2 said handle is a lever handle and is in a rotated position when said
3 spindle is locked with said latchbolt unlatched.

1 27. The apparatus according to Claim 19,

2 wherein

3 said lock body includes a chassis plate rotationally supporting said
4 spindle and including a radial first notch;

5 said spindle includes a second notch in radial alignment with said first
6 notch when said spindle is in a rotated position unlatching said latchbolt;

7 and further including

8 a radially extending member carried by said spindle and captured by said
9 first notch; and

10 a lock in said handle coupled to said member for moving said member
11 longitudinally along said notches, when said notches are radially aligned,
12 between a first longitudinal position captured by said second notch and a second
13 longitudinal position not captured by said second notch.

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1 28. The apparatus according to Claim 27 wherein:

2 said handle is a lever handle and is in a rotated position when said
3 latchbolt is unlatched.

1 29. The apparatus according to Claim 27,

2 wherein

3 said lock is a bored cylinder lock having a rotatable tail piece;

4 and further including

5 a rotational-to-translational motion converter carried by said spindle for
6 converting rotation of said tail piece to longitudinal movement of said member.

1 30. The apparatus according to Claim 27, further including:

2 a key insertable in said bored lock cylinder and rotatable for rotating said
3 tail piece.

1 31. The apparatus according to Claim 22,

2 wherein

3 said door trim includes an opening;

4 and further including

5 an attachment plate secured to said door trim, said attachment plate

6 including an opening in registration with said opening in said door trim, said

7 openings permitting insertion of said cylinder lock therein, said attachment plate

8 adapted to releasably secure said cylinder lock thereto when said cylinder lock is

9 inserted in said openings.

1 32. The apparatus according to Claim 31, wherein:
2 said opening in said attachment plate and said opening in said door trim
3 are configured for facilitating outward withdrawal of said cylinder lock upon
4 rotation of said cylinder.

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1 33. A cylindrical lock apparatus for a door, comprising the combination of:
2 a latchbolt, a lock body having a retractor for said latchbolt, a spindle
3 extending from a first side of said lock body and coupled to said retractor for
4 unlatching said latchbolt upon rotation of said spindle, a handle secured to said
5 spindle for rotating said spindle, and a lock in said handle for locking said
6 spindle when said spindle is in a rotated position unlatching said latchbolt.

1 34. The apparatus according to Claim 33, wherein:
2 said handle is a lever handle and is in a rotated position when said
3 spindle is locked for unlatching said latchbolt.

1 35. A cylindrical lock apparatus for a door, comprising the combination of:

2 a latchbolt, a lock body having a retractor for said latchbolt, a spindle
3 coupled to said retractor for unlatching said latchbolt upon rotation of said
4 spindle, and a handle secured to said spindle for rotating said spindle;

5 a chassis plate rotationally supporting said spindle with respect to said
6 lock body, said chassis plate including a radial first notch;

7 a second notch in said spindle in radial alignment with said first notch
8 when said spindle is in a rotated position unlatching said latchbolt;

9 a radially extending member carried by said spindle and captured by said
10 first notch; and

11 a lock in said handle coupled to said member for moving said member
12 longitudinally along said notches, when said notches are radially aligned,
13 between a first longitudinal position captured by said second notch and a second
14 longitudinal position not captured by said second notch.

1 36. The apparatus according to Claim 35, wherein:
2 said handle is a lever handle and is in a rotated position when said
3 latchbolt is unlatched.

1 37. The apparatus according to Claim 35,
2 wherein
3 said lock is a bored cylinder lock having a rotatable tail piece;
4 and further including
5 a rotational-to-translational motion converter carried by said spindle for
6 converting rotation of said tail piece to longitudinal movement of said member.

1 38. The apparatus according to Claim 37, further including:
2 a key insertable in said bored lock cylinder and rotatable for rotating said
3 tail piece.